ABSTRACTS

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The World Bank
Research Advisory Staff
Policy Research Dissemination Center
April–June 1998

ABSTRACTS
APRIL–JUNE 1998

Produced by the Policy Research Dissemination Center

1894. Applying a Simple Measure of Good Governance to the Debate on Fiscal Decentralization

Jeff Huther and Anwar Shah
(March 1998)

Applying an index for the quality of governance reveals a surprisingly strong positive correlation between fiscal decentralization and quality of governance.

Debates about the appropriate role, policies, and institutions of the state are often hampered by the lack of a definition for "good government." To provide a quantifiable measure of good government, Huther and Shah develop an index for the quality of governance for a sample of 80 countries. They apply the index to the debate on the appropriate level of fiscal decentralization.

In measuring the quality of governance, the authors develop indices for the government's ability to:

- Ensure political transparency and a voice for all citizens (the citizen participation index measures political freedom and political stability).
- Provide effective public services efficiently (the government orientation index measures judicial and bureaucratic efficiency and the absence of corruption).
- Promote the health and well-being of its citizens (the social development index measures human development and equitable distribution of income).
- Create a favorable climate for stable economic growth (the economic management index measures outward orientation, independence of the central bank, and an inverted debt-to-GDP ratio).

In relating the index of governance quality to degree of fiscal decentralization for the 80 countries, Huther and Shah are not surprised to find a positive relationship between fiscal decentralization and quality of governance. But the strength of the correlation is surprising.

This paper — a product of Country Evaluation and Regional Relations Division, Operations Evaluation Department — is part of a larger effort in the department to examine the role of the authorizing environment in public sector performance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Silvana Valle, room G6-079, telephone 202-458-4493, fax 202-522-3124, Internet address svalle@worldbank.org. (33 pages)

1895. The Emergence of Markets in the Natural Gas Industry

Andrej Juris
(March 1998)

Deregulation and restructuring of the natural gas industry in many countries has led to the development of new markets that have changed how the industry operates. A growing number of countries —including the United States, the United Kingdom, and Argentina — are reforming their gas sectors to increase competition and develop new models of interaction among participants. A number of models and lessons of reform are available to other countries interested in reforming their natural gas industry.

As countries have deregulated prices and lowered entry barriers in the natural gas industry, many new participants have emerged, promoting competition in the newly created markets. The increased competition has benefited everyone through more efficient pricing and greater choice among natural gas contracts.

Four distinct structural models have emerged in the industry's restructuring. The traditional model (a vertically integrated industry) has been increasingly replaced by models that decentralize the industry along horizontal and vertical lines.

With increasing decentralization, regulation of the industry focuses on pipeline transportation and distribution, the industry segments with natural monopoly characteristics. Regulation aims to protect both end users and participants in the deregulated segments from the market power of companies operating in the monopolistic segments.

As a result of deregulation, two major markets emerge: the natural gas market (which facilitates the trading of natural gas as a commodity) and the transportation market (which enables market participants to trade the services needed to ship natural gas through pipelines). Competition and open entry are crucial for these two markets to function efficiently. The transportation market is affected by the market power of pipeline companies, but resale of transportation contracts brings competition to this market and facilitates the efficient allocation of contracts. Intermediaries and spot markets promote efficient pricing and minimize transactions costs.

Markets have become more complex with deregulation, and trading mechanisms are needed to ensure the simultaneous clearing of natural gas and transportation markets at minimum cost to the industry. Two main trading models guide transactions: the bilateral trading model (which relies on decentralized bilateral negotiations between market participants) and the poolco model (which relies on a centralized entity to coordinate transactions).

Properly applied, both models lead to the same outcome. The bilateral trading model has dominated because of its simplicity of implementation, but the poolco model has great potential once problems of sharing and processing information are addressed.

This paper — a product of the Private Participation in Infrastructure Group, Private Sector Development Department — is part of a larger effort in the department to analyze issues arising from private participation in infrastructure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sandra Vivas, room Q7-005, telephone 202-458-2809, fax 202-522-3481, Internet address svivas@worldbank.org. (37 pages)

1896. Congestion Pricing and Network Expansion

Thomas-Olivier Nasser
(March 1998)

Deregulation has transformed such network industries as gas, electricity, and telecommunications. What part does congestion pricing play in the new environment and, in particular, how does congestion pricing affect network expansion?

Over the past decade network industries (such as gas, electricity, and telecommunications) have undergone a dramatic transformation. Competition has been introduced in industries that had long been viewed as textbook examples of natural monopolies.

Production and transport have been unbundled to foster the introduction of competition: the capacity provider (the owner of the infrastructure) now often differs from the service provider. Chief among the challenges this raises for economists and policymakers: to design institutions that lead to "optimal" network expansion.

Different arrangements have been suggested, ranging from indicative planning to decentralization of investment decisions through congestion pricing. Two questions lie at the core of the debate: Is the infrastructure network still a natural monopoly? And what role should congestion pricing play in ensuring optimal network expansion?

Nasser shows that simple economic principles apply to the use of congestion pricing to induce network expansion:

- If network provision is competitive, congestion pricing leads to optimal investment.
- If network provision is monopolistic, congestion pricing leads to underinvestment.

He shows the model applying to power networks as well as to the Internet.

Policymakers must therefore assess whether network expansion is indeed competitive and design institutions that ease entry, or design an appropriate regulatory framework.

This paper — a product of the Private Participation in Infrastructure Group, Private Sector Development Department — is part of a larger effort in the department to analyze issues arising from private participation in infrastructure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sandra Vivas, room Q7-005, telephone 202-458-2809, fax 202-522-3481, Internet address svivas@worldbank.org. (29 pages)

1897. Development of Natural Gas and Pipeline Capacity Markets in the United States

Andrej Juris
(March 1998)

Deregulation of the U.S. natural gas industry has shown that market forces can produce efficient transactions in industries traditionally considered natural monopolies. Deregulation of retail markets remains the most important task, and the biggest challenge, industry regulators face.

Deregulation of the U.S. natural gas industry has been under way since the late 1970s. The industry was deregulated to create competitive markets in natural gas and its pipeline transportation, in the expectation that competition would guide transactions toward a more efficient outcome.

Juris provides an overview of the deregulation process and its effect on the development and functioning of natural gas and gas transportation markets in the United States. He analyzes the trading of pipeline capacity in primary and secondary markets and the regulation of pipeline transportation, identifies mechanisms that pipeline companies use to coordinate bilateral transactions, and summarizes deregulation's main achievements in the U.S. natural gas industry.

Industry achievements in the past 15 years show that expectations were not unrealistic. The United States enjoys a highly competitive wholesale natural gas market and an increasingly competitive interstate transportation market. Both markets have benefited from the deregulation of natural gas production and marketing and the liberalization of natural gas prices.

Introducing open access to interstate pipelines and their unbundling from gas sales has allowed end users to participate in the efficiency gains in upstream markets. All this has contributed to declining retail prices for all major consumer categories.

Deregulation is far from complete, however. Current regulation of interstate pipeline companies and the secondary transportation market does not promote efficient allocation of transportation contracts. Flexible pricing of transportation contracts should be introduced in both the primary and secondary transportation markets.

But deregulation of retail markets remains the most important task and the biggest challenge facing industry regulators. Small-volume end users (such as residential or commercial customers) are captive to local distribution utilities, without access to competitive wholesale markets. All end users should be able to choose a natural gas supplier and receive natural gas at the minimum cost to society.

This paper — a product of the Private Participation in Infrastructure Group, Private Sector Development Department — is part of a larger effort in the department to analyze issues arising from private participation in infrastructure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sandra Vivas, room Q7-005, telephone 202-458-2809, fax 202-522-3481, Internet address svivas@worldbank.org. (50 pages)

1898. Does Membership in a Regional Preferential Trade Arrangement Make a Country More or Less Protectionist?

Faezeh Foroutan
(March 1998)

It seems participation in a regional trade agreement does not necessarily lead to a more liberal import regime.

Foroutan explores whether a systematic relationship exists between a developing country's participation in a preferential regional trade agreement (RTA) and the restrictiveness of its trade regime.

The motivation for her study is provided by the current debate about whether regional trading blocs are a stepping-stone toward a more liberal global trading system and whether these blocs have changed over time so that the "new" blocs differ meaningfully from the "old" ones in terms of openness to the rest of the world.

She restricts analysis to reciprocal RTAs involving developing countries in partnership either with industrial countries (North-South RTAs) or with other developing countries (South-South RTAs).

Nearly every developing country belongs to one or more RTAs, so Foroutan develops criteria for distinguishing effective from noneffective regional blocs. She then taps into many sources of data to compare levels of restrictiveness.

She finds no evidence that participation in a regional trade agreement necessarily leads to a more liberal import regime.

This paper — a product of International Trade, Development Research Group — is part of a larger effort in the group to study preferential trade issues. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada @worldbank.org. (34 pages)

1899. Determinants of Emerging Market Bond Spread: Do Economic Fundamentals Matter?

Hong G. Min
(March 1998)

Macroeconomic variables matter and so does liquidity. External shocks (international interest rates) appear not to matter.

In the 1990s international bond issues from developing countries surged dramatically, becoming one of the fastest-growing devices for financing external development. Their terms have improved as institutional investors have become more interested in emerging market securities and better economic prospects in a number of developing countries. But little is known about what determines the pricing and thus the yield spreads of new emerging market bond issues.

Min investigates what determines bond spreads in emerging markets in the 1990s. He finds that strong macroeconomic fundamentals in a country — such as low domestic inflation rates, improved terms of trade, and increased foreign assets — are associated with lower yield spreads.

By contrast, higher yield spreads are associated with weak liquidity variables in a country, such as a high debt-to-GDP ratio, a low ratio of foreign reserves to GDP, a low (high) export (import) growth rate, and a high debt-service ratio.

At the same time, external shocks — as measured by the international interest rate — matter little in the determination of bond spreads.

In the aggregate, Latin American countries have a negative yield curve.

This paper — a product of the Development Research Group — is part of a larger effort in the group to study international transmission of financial crises in emerging economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Eany Oh, room MC3-456, telephone 202-473-3410, fax 202-522-1155, Internet address poh@worldbank.org. (31 pages)

1900. Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence

Asl1 Demirgüç-Kunt
and Harry Huizinga
(March 1998)

Differences in interest margins reflect differences in bank characteristics, macroeconomic conditions, existing financial structure and taxation, regulation, and other institutional factors.

Using bank data for 80 countries for 1988–95, Demirgüç-Kunt and Huizinga show that differences in interest margins and bank profitability reflect various determinants:

- Bank characteristics.
- Macroeconomic conditions.
- Explicit and implicit bank taxes.
- Regulation of deposit insurance.
- General financial structure.
- Several underlying legal and institutional indicators.

Controlling for differences in bank activity, leverage, and the macroeconomic environment, they find (among other things) that:

- Banks in countries with a more competitive banking sector — where banking assets constitute a larger share of GDP — have smaller margins and are less profitable. The bank concentration ratio also affects bank profitability; larger banks tend to have higher margins.
- Well-capitalized banks have higher net interest margins and are more profitable. This is consistent with the fact that banks with higher capital ratios have a lower cost of funding because of lower prospective bankruptcy costs.
- Differences in a bank's activity mix affect spread and profitability. Banks with relatively high noninterest-earning assets are less profitable. Also, banks that rely largely on deposits for their funding are less profitable, as deposits require more branching and other expenses. Similarly, variations in overhead and other operating costs are reflected in variations in bank interest margins, as banks pass their operating costs (including the corporate tax burden) on to their depositors and lenders.
- In developing countries foreign banks have greater margins and profits than domestic banks. In industrial countries, the opposite is true.
- Macroeconomic factors also explain variation in interest margins. Inflation is associated with higher realized interest margins and greater profitability. Inflation brings higher costs — more transactions and generally more extensive branch networks — and also more income from bank float. Bank income increases more with inflation than bank costs do.
- There is evidence that the corporate tax burden is fully passed on to bank customers in poor and rich countries alike.
- Legal and institutional differences matter. Indicators of better contract enforcement, efficiency in the legal system, and lack of corruption are associated with lower realized interest margins and lower profitability.

This paper — a product of the Development Research Group — is part of a larger effort in the group to study bank efficiency. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-7656, fax 202-522-1155, Internet address ademirguckunt @worldbank.org. (48 pages)

1901. Reaching Poor Areas in a Federal System

Martin Ravallion
(March 1998)

The aid allocation to a province in a federal system should depend not only on how poor the province is but on how successfully it discriminates in favor of poor areas in public spending. In Argentina, stronger incentives are needed.

Ravallion studies how well a federal antipoverty program reaches poor areas, taking the reactions of lower levels of government into account.

He studies performance in reaching poor areas before and after World Bank-sponsored reforms in Argentina's antipoverty program. Program resources were substantially reallocated across provinces when Argentina's Trabajar 1 program was replaced by Trabajar 2, with increased spending and greater targeting to poor areas.

Overall, performance in reaching poor areas (regardless of province) improved nationally. About a third of the gain in the program's ability to reach poor areas was attributed to the program's greater ability to reach poor provinces. The rest was attributed to better targeting of poor areas within provinces.

The provinces differed greatly in ability to reach poor areas. History mattered. Differences in performance after reform partly reflected differences under the old program.

Controlling for those factors, however, poorer provinces were less successful in targeting their poor areas.

A higher provincial poverty rate attracted more central spending, which tended to result in more pro-poor spending within provinces. But even with greater central spending on poor provinces, poorer provinces were less successful at discriminating in favor of their poor areas. Decentralization generated substantial horizontal inequality in public spending on poor areas.

The center clearly needs to give provincial governments stronger incentives to target the poor. Allocations to a province should depend not only on how poor the province is but on how successfully it discriminates in favor of poor areas. The results of this study suggest that stronger incentives are needed.

This paper — a product of the Development Research Group — is part of a larger effort in the group to help assess the performance of the Bank's antipoverty projects. The study was funded by the Bank's Research Support Budget under the research project "Policies for Poor Areas" (RPO 678-69). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. (39 pages)

1902. When Economic Reform is Faster than Statistical Reform: Measuring and Explaining Inequality in Rural China

Martin Ravallion and Shaohua Chen
(March 1998)

Household survey data show income inequality increasing in post-reform rural China — but this may reflect methods used to process data rather than the real effect of structural changes on China's rural economy.

Official tabulations from household survey data suggest rising income inequality in post-reform rural China, a trend of public concern. But the structural changes in China's rural economy have not been properly reflected in the methods used to process raw survey data.

Using micro data for four provinces, Ravallion and Chen find that two-thirds of the conventionally measured increase in inequality in 1985–90 vanishes when market-based valuation methods are used and allowances are made for regional cost-of-living differences.

The data revisions also suggest somewhat different explanations for rising inequality. Nonfarm income was secondary to grain production. While access to farm land was relatively equal, higher returns to land over time were inequality-increasing. But holding other factors constant, lower returns to physical capital reduced inequality over time, as did private transfers.

This paper — a product of the Development Research Group — is part of a larger effort in the group to improve data on poverty and inequality in developing countries. The study was funded by the Bank's Research Support Budget under the research project "Dynamics of Poverty in Rural China." Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader @worldbank.org. (38 pages)

1903. Taxing Capital Income in Hungary and the European Union

Jean-Jacques Dethier and Christoph John
(March 1998)

Without higher savings rates, Hungary cannot expect accelerated economic growth. In reforming Hungary's system of taxing capital income, policymakers should strive to level the playing field in financial markets but should not distort incentives to increase savings.

Countries seeking membership in the European Union (EU) cannot look to the EU for a blueprint for reforming their system for taxing capital income. Indeed, it is hard to generalize about tax systems in the EU.

Most member states apply fairly low tax rates to interest payments and discriminate against profit distributions. But tax rates, exemption levels, and methods of tax integration differ greatly within and across countries, and there is almost no harmonization of methods for taxing capital income. Approaches to taxing capital gains vary greatly, and distortions arise from the treatment of various sources of capital income.

In 1993, when the EU began efforts to integrate capital markets, member countries proposed various ways to harmonize capital income taxes, including a proposal to introduce a withholding tax on interest income of residents of member states, with a minimum rate of 15 percent (revised to 10 percent). Under this scheme all interest on bank deposits and government and private bonds would be taxed and there might also be a final withholding tax on residents' interest income. But the proposal was not accepted and the EU Commission decided to maintain the status quo, not to pressure member countries to harmonize company taxes.

But Hungary could look for models in the Nordic countries (especially Norway and Sweden), Austria, and Finland, which have undertaken far-reaching reforms of capital income taxation.

In most EU countries capital gains are either not (directly) taxed or are not taxed systematically. In Finland and Norway identical tax rates are applied to all types of capital income including capital gains.

The centerpiece of the "Scandinavian model" is a dual income tax, combining a progressive tax on personal income with a flat-rate tax on all types of capital income. The Scandinavian model contrasts sharply with the "comprehensive income taxation" model, under which a single (progressive) tax schedule is applied to income from all sources.

In Austria the treatment of different types of capital income is relatively uniform but the composite tax burden on capital income resembles the highest personal income tax rate rather than a reduced rate. Austria's rate of tax evasion *was* high, but a 10 percent withholding tax applied to all interest-bearing assets has reduced discrimination against honest taxpayers.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, Europe and Central Asia — is part of a larger effort in the region to research issues related to the European Union's accession of Central and Eastern European countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jennifer Smith, room H11-093, telephone 202-458-7215, fax 202-477-1440, Internet address jsmith3@worldbank.org. (38 pages)

1904. Ecuador's Rural Nonfarm Sector as a Route Out of Poverty

Peter Lanjouw
(March 1998)

The nonagricultural rural sector represents a potentially important route out of poverty in Ecuador. Poverty declines as the share of income from nonagricultural sources rises. Nonagricultural employment and earnings are positively associated with better education and infrastructure access. Poverty could be expected to fall substantially with expansion in nonfarm sectors such as construction, transport, commerce, and services.

Lanjouw analyzes a recent household survey for Ecuador to assess the role of the nonagricultural rural sector in reducing poverty. That sector accounts for roughly 40 percent of rural incomes in Ecuador, three-fourths of which comes from nonagricultural enterprises as opposed to wage labor. The sector provides employment to nearly 40 percent of men and 50 percent of economically active women.

The nonagricultural rural sector represents a potentially important route out of poverty: Poverty declines as the share of income from nonagricultural sources rises.

Nonagricultural employment and earnings are positively associated with higher education levels and better access to infrastructure services. Although women are more likely than men to be employed in this sector, their earnings for given education levels and other household characteristics are significantly lower.

All other things equal, the greatest fall in poverty could be expected from expanding employment opportunities in transport, commerce-related activities, and such services as administration and the hotel and restaurant trade.

This paper — a product of the Development Research Group — is part of a larger effort in the group to study the role of the nonfarm sector in the rural economy. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Peter Lanjouw, room MC3-555, telephone 202-473-4529, fax 202-522-1153, Internet address planjouw@worldbank.org. (50 pages)

1905. Child Labor in Côte d'Ivoire: Incidence and Determinants

Christiaan Grootaert
(March 1998)

Most children in Côte d'Ivoire perform some kind of work. In rural areas, more than four of five children work, with only a third combining work with schooling.

Child labor in Côte d'Ivoire increased in the 1980s because of a severe economic crisis. Two out of three urban children aged 7 to 17 work; half of them also attend school. In rural areas, more than four out of five children work, but only a third of them manage to combine work with schooling.

Full-time work is less prevalent, but not negligible. Roughly 7 percent of urban children work full time (an average 46 hours a week). More than a third of rural children work full time (an average of 35 hours a week), with the highest incidence in the Savannah region.

The incidence of such full-time work rises with age but is by no means limited to older children. The average age of the full-time child worker in Côte d'Ivoire is 12.7. These children have received an average 1.2 years of schooling. That child is also more likely to be ill or injured and is less likely to receive medical attention than other children.

Urban children in the interior cities are far more likely to work and their working hours are much longer. Among rural children, those in the Savannah region (where educational infrastructure lags far behind the rest of the country) are most likely to work.

Five factors affect a household's decision to supply child labor:

- The age and gender of the child (girls are more likely to work, especially when the head of household is a woman).
- The education and employment status of the parents (low parental education is a good targeting variable for interventions).
- The availability of within-household employment opportunities.
- The household's poverty status.
- The household's location (calling for geographical targeting).

With improved macroeconomic growth, it is hoped, child labor will decline — but a significant decline could take several generations. Meanwhile, it is important to:

- Use a gradual approach toward the elimination of child work by aiming initial interventions at facilitating combined work and schooling.
- Support the development of home enterprises as part of poverty alleviation programs, but combine it with incentives for school attendance.
- Make school hours and vacation periods flexible (accommodating harvest times) in rural areas. This would also improve children's health.
- Improve rural school attendance by having a school in the village rather than 1 to 5 kilometers away.
- Improve educational investment in the Savannah.

This paper is a product of the Social Development Department. The study was funded by the Bank's Research Support Budget under the research project "Child Labor: What Role for Demand-Side Interventions" (RPO 680-64). Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Gracie Ochieng, room MC5-158, telephone 202-473-1123, fax 202-522-3247, Internet address gochieng@worldbank.org. (75 pages)

1906. Developing Countries' Participation in the World Trade Organization

Constantine Michalopoulos
(March 1998)

Many developing countries are not participating in the World Trade Organization as much as they should. What can be done about it?

In the 1960s and 1970s developing countries viewed UNCTAD rather than the GATT as the main institution through which to promote their interests in international trade. But beginning with the Uruguay Round in the mid-1980s, their attitude changed, many more of them became members of the GATT, and a significant number played an active role in negotiations.

Michalopoulos analyzes developing countries' representation and participation in the World Trade Organization (WTO) as of mid-1997 to determine how developing countries can effectively promote their interests and discharge their responsibilities under the rules and agreements of the new organization.

He concludes that although many developing countries are actively participating in the new process, more than half of the developing countries that are members of the WTO participate little more than they did in the early 1980s and have not increased their staffing, despite the vastly greater complexity of issues and obligations. Institutional weaknesses at home are the main constraints to effective participation and representation of their interests at the WTO.

To make their participation more effective, Michalopoulos recommends that the developing countries establish adequately staffed WTO missions based in Geneva; failing that, pooling their resources and representation in Geneva; and being sure to pay their dues, which are typically small. He recommends that the international community place higher priority on programs of assistance in support of institutional development of poorer countries aimed at enhancing their capacity to participate in the international trading system and the WTO — and that the WTO review its internal rules and procedures to ensure that inadvertently they do not make developing countries participation more difficult.

This paper is part of a larger effort by the World Bank to collaborate with the World Trade Organization in developing approaches for the more effective integration of the developing countries in the international trading system. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. (34 pages)

1907. Development Expenditures and the Local Financing Constraint

Albert D. K. Agbonyitor
(April 1998)

The inadequacy of local funds is a major financing problem in most low-income economies. It is undercutting the absorption of aid and the sustainability of development projects.

Focusing on the local financing constraint sheds new light on issues of aid, fiscal reform, and the management of public spending.

The fungibility of aid need not translate into resource flows to fill the local financing gap. Indeed, project aid can widen the local financing gap. To augment direct local financing of development, aid must be nonproject aid that can generate local currency. In the longer term, project aid's effect on local financing lies in its impact on growth and on expanding the base for tax revenues, seigniorage, and borrowing.

When inadequate local financing limits project implementation and effective use of aid, local currency funds are more valuable than project aid, at the margin — and it becomes important to reallocate local funds, to leverage project aid, and to raise the quality of investment projects.

A persistent gap in local financing complicates programs of fiscal reform. For such programs to be effective, the local financing gap has to be confronted directly by matching planned local fund expenditures against expected local fund receipts. This requires a transparent database to develop indicators and to monitor the allocation and use of local resources.

This paper — a product of the Macroeconomics Division II, Eastern Africa Department — is part of a larger effort in the department to understand the effectiveness of development expenditures. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lorraine James, room J10-282, telephone 202-473-5621, fax 202-473-8262, Internet address ljames@worldbank.org. (18 pages)

1908. How Dirty Are "Quick and Dirty" Methods of Project Appraisal?

Dominique van de Walle
and Dileni Gunewardena
(April 1998)

Routine "quick-and-dirty" methods of project appraisal can be so dirty in guiding project selection as to wipe out the net social gains from public investment.

Routine "quick-and-dirty" methods of project appraisal can be so dirty in guiding project selection as to wipe out the net social gains from public investment, contend van de Walle and Gunewardena, illustrating their point with a case study of irrigation projects in Vietnam.

They test a common quick-and-dirty method for estimating benefits from irrigation investments, using data for Vietnam. They compare the results with impacts assessed through econometric modeling of marginal returns, which allows for household and area heterogeneity using integrated household-level survey data.

The quick-and-dirty method performs well in estimating average benefits nationally but can be misleading for some regions and, by ignoring heterogeneity, overestimates how much the poor gain.

At moderate to high project cost levels, quick-and-dirty makes enough mistakes to eliminate the net benefits from public investment. When irrigating as little as 3 percent of Vietnam's nonirrigated land, the savings from the more data-intensive method are enough to cover the costs of the extra data required.

This paper — a product of the Development Research Group — is part of a larger effort in the group to assess the welfare impacts of public spending. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Bernardo, room MC2-501, telephone 202-473-1148, fax 202-522-1154, Internet address cbernardo@worldbank.org. (38 pages)

1909. Capital Market Responses to Environmental Performance in Developing Countries

Susmita Dasgupta, Benôit Laplante,
and Nlandu Mamingi
(April 1998)

Capital markets do respond to information about a firm's environmental performance and if properly informed, may provide appropriate financial and reputational incentives for pollution control. Perhaps more resources should be used for disseminating firm-specific information about environmental performance to allow all stakeholders to make informed decisions.

Firms in developing countries are often said to have no incentives to invest in pollution control because they typically face weak monitoring and enforcement of environmental regulations. But the inability of formal institutions to control pollution through fines and penalties may not be as serious an impediment to pollution control as is generally argued, contend Dasgupta, Laplante, and Mamingi.

Capital markets may react negatively to news of adverse environmental incidents (such as spills or violations of permits) as well as positively to the announcement that a firm is using cleaner technologies.

The authors assess whether capital markets in Argentina, Chile, Mexico, and the Philippines react to the announcement of firm-specific environmental news. They show that:

- Capital markets react positively (the firms' market value increases) to the announcement of rewards and explicit recognition of superior environmental performance.
- They react negatively (the firms' value decreases) to citizens' complaints.

Environmental regulators in developing countries could (1) harness market forces by introducing structured programs to release firm-specific information about environmental performance, and (2) empower communities and stakeholders through environmental education programs.

This paper — a product of the Development Research Group — is part of the group's ongoing work on industrial pollution and also to study whether capital markets in developing countries can provide incentives needed for pollution control. The study was funded by the Bank's Research Support Budget under the research project "Incentives for Pollution Control: The Role of Capital Markets" (RPO 680-76). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Roula Yazigi, room MC2-622, telephone 202-473-7176, fax 202-522-3230, Internet address ryazigi@worldbank.org. (36 pages)

1910. Capital Outflow from the Agriculture Sector in Thailand

Junichi Yamada
(April 1998)

To understand Thailand's policy on development and industrialization, one must also study its policy on trade and agriculture.

Certain Thai policies have facilitated economic development in Thailand:

- Raising agricultural productivity even during the early period of import substitution.
- The relatively equal distribution of land.
- Decentralized industrial growth.
- The labor-intensive export orientation of both rural and urban industries.
- Generally open, merit-based access to education.

Yamada studies capital flows between Thailand's agriculture and nonagriculture sectors, focusing especially on government policy for agriculture, which shapes government-based flows. He measures government- and market-based flows of both the agriculture sector and agricultural regions.

Until the 1960s, Thailand's economy depended heavily on agriculture and most of the workforce was agricultural. Since the 1960s, Thailand has promoted industry. Between 1961 and 1991, agriculture continued to grow but because nonagriculture sectors grew even faster, agriculture's share of GDP fell from 37 percent to 13 percent. But agriculture still employs the majority of the labor force and still receives the third largest budget allocations (after education and national defense).

Many believe that Thai development was made possible by capital accumulation based on an agricultural surplus. To some extent, the role of that surplus before 1975 should not be underestimated. But the government-based flow of capital from agriculture (measured as a percentage of GDP) was less than 6 percent in the 1960s and early 1970s (except for three years), and the market-based flow was only 3 percent of GDP in 1971, 2.5 percent in 1981, and 1.9 percent in 1991 (measured as deposits minus commercial bank lending).

So capital flows from agriculture have not been as large as is typically assumed. Since the 1970s, the government has adopted an export-oriented policy emphasizing labor-intensive light industry, and investments to promote labor-intensive industries in rural areas has created jobs for rural people. With a fair level of investment in rural areas, the environment in rural areas is not drastically worse than that in urban areas (unlike Latin American and African countries), and migration to urban areas has been limited in Thailand.

The government-based inflow (government credit for, and investment in, agriculture) was significantly greater for large farms areas than for small-farm areas. This might be attributable less to the political power of large-farm owners than to industrialization in Thailand's central region.

This paper — a product of the Development Research Group — is part of a larger effort in the group to study rural development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Emily Khine, room MC3-341, telephone 202-473-7471, fax 202-522-3518, Internet address ekhine@worldbank.org. (35 pages)

1911. The Internationalization of Financial Services in Asia

Stijn Claessens and Tom Glaessner
(April 1998)

Asian countries should consider the benefits of opening their financial service sectors more quickly—at the same time that they are liberalizing capital accounts and deregulating domestic financial markets.

The internationalization of financial services — eliminating discrimination between the treatment of foreign and domestic providers of financial services and removing barriers to the cross-border provision of financial services — is of global interest, especially in Asia.

Most of Asia limits the entry of foreign financial firms much more than otherwise comparable countries do. Empirical evidence for Asia and elsewhere suggests that this slows down institutional development and that, as a result, it costs more to provide financial services.

Asian countries could benefit from accelerating the opening of the financial services sector, in conjunction with the further liberalization of capital accounts and domestic deregulation of financial markets.

Apart from other benefits, internationalization helps build more robust, efficient financial systems by introducing international practices and standards; by improving the quality, efficiency, and breadth of financial services; and by allowing more stable sources of funds.

The ongoing WTO negotiation of financial services under GATS gives countries the opportunity to commit to opening their financial sectors. Safeguards can be built into the process, and the liberalization can be phased in gradually.

This paper — a product of the Economic Policy Division, Poverty Reduction and Economic Management Network — is part of a larger effort in the network to study financial reform in developing countries. The paper was written during the summer of 1997, before the East Asia financial crisis and before the conclusion of the WTO negotiations in December 1997. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC4-404, telephone 202-473-3722, fax 202-522-2530, Internet address hvo1@worldbank.org. (58 pages)

1912. Pay and Grade Differentials at the World Bank

Deon Filmer, Margaret Grosh, Elizabeth King, and Dominique van de Walle
(April 1998)

At the World Bank, only about half of salary and grade differentials between men and women and between staff from high- and low-income countries are attributable to differences in worker characteristics. Neither omitted-variable bias nor quotas imposed to ensure diversity are compelling explanations for remaining differentials in salary and grade. Discrimination is likely to explain some of the remainder.

Large international organizations such as the World Bank pursue many objectives in hiring policies, including reduced costs, cultural diversity, and the avoidance of discrimination.

There can be sharp tradeoffs between these objectives. Diversity is enhanced by recruiting from an international labor market, for example, but international organizations face unusually large differences in reservation wages for staff capable of doing the same work.

One way to reduce costs would be to pay employees their reservation wages, which implies unequal pay for equal work, or discrimination.

Filmer, Grosh, King, and van de Walle show how these tradeoffs are resolved in the World Bank's hiring processes. They estimate disparities in salary and grades between men and women and by country of origin that cannot be attributed to differences in the productive characteristics of workers.

The results indicate that about half the salary and grade differentials between men and women and staff from high- and low-income countries are attributable to differences in worker characteristics.

They explore a number of alternative explanations for the rest of the salary and grade differentials, including omitted-variable bias, quotas imposed to ensure diversity, and discrimination in hiring and promoting.

They argue that neither omitted-variable bias nor quotas are compelling explanations for disparities and that discrimination probably exists, although certainly less than would be implied by a cost-minimizing hiring policy.

A shift seems to be occurring in the hiring process at the Bank, possibly because (1) the application pool, including women and Part II nationals (from developing countries) has significantly improved in quality, (2) information gathering during hiring has intensified, decreasing guesswork, (3) there is more incentive to staff from minority groups, and (4) the Bank's increasing diversity in terms of gender and nationality groups is more conducive to high performance by the people against whom there may previously have been bias.

This paper — a product of the Development Research Group — is part of a larger effort in the group to apply economic analysis to policy issues. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Bernardo, room MC2-501, telephone 202-473-1148, fax 202-522-1154, Internet address cbernardo@worldbank.org. (72 pages)

1913. The 1994 Currency Crisis in Turkey

Oya Celasun
(April 1998)

Huge requirements for public sector borrowing in 1993 and early 1994, combined with major policy errors in financing the deficit, led to Turkey's currency crash in 1994.

As a result of Turkey's currency crisis in 1994, output fell 6 percent, inflation rose to three-digit levels, the Central Bank lost half of its reserves, and the exchange rate (against the U.S. dollar) depreciated by more than half in the first three months of the year.

Celasun presents stylized facts associated with the government's debt-financing mechanisms and other relevant macroeconomic variables to show the system's inherent fragility at the time of the crisis and to clarify the extent to which different factors contributed to the crisis.

Celasun argues that huge requirements for public sector borrowing in 1993 and early 1994, combined with major policy errors in financing the deficit, led to the currency crash. As a result of interventions to control interest rates and Treasury borrowing at the same time, the market for domestic borrowing almost disappeared, the government turned to monetization for financing, and the value of the overappreciated Turkish lira plummeted.

This paper — a product of the Development Research Group — is part of a larger effort in the group to study currency crises. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kari Labrie, room MC3-347, telephone 202-473-1001, fax 202-522-3518, Internet address klabrie@worldbank.org. (44 pages)

1914. Distinguishing between Types of Data and Methods of Collecting Them

Jesko Hentschel
(April 1998)

In the "quantitative-qualitative" debate, analysts often fail to make a clear distinction between methods of data collection used *and* types of data generated. *Using characteristic information needs for health planning derived from data on the use of health services, this paper shows that each combination of method (contextual or noncontextual) and data (quantitative or qualitative) is a unique primary source of information.*

Hentschel examines the role of different data collection methods — including the types of data they produce — in the analysis of social phenomena in developing countries.

He points out that one confusing factor in the "quantitative-qualitative" debate is that a distinction is not clearly made between *methods of data collection used* and *types of data generated.*

He maintains the divide between quantitative and qualitative types of data but analyzes methods according to their "contextuality": the degree to which they try to understand human behavior in the social, cultural, economic, and political environment of a given place.

He emphasizes that it is most fruitful to think of both methods and data as lying on a continuum stretching from more to less contextual methodology and from more to less qualitative data output.

Using characteristic information needs for health planning derived from data on the use of health services, he shows that each combination of method (more or less contextual) and data (more or less qualitative) is a unique primary source that can fulfill different information requirements.

He concludes that:

- Certain information about health utilization can be obtained only through contextual methods — in which case strict statistical representability must give way to inductive conclusions, assessments of internal validity, and replicability of results.
- Often contextual methods are needed to design appropriate noncontextual data collection tools.
- Even where noncontextual data collection methods are needed, contextual methods can play an important role in assessing the validity of the results at the local level.
- In cases where different data collection methods can be used to probe general results, the methods can — and need to be — formally linked.

This paper — a product of the Poverty Group, Poverty Reduction and Economic Management Network — is part of a larger effort in the network to combine research methods from different disciplines in the design of poverty reduction strategies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact the PREM Advisory Service, room MC4-501, telephone 202-458-7736, fax 202-522-1135, Internet address premadvisory@worldbank.org. The author may be contacted at jhentschel @worldbank.org. (37 pages)

1915. Distortionary Effects of State Trading in Agriculture: Issues for the Next Round of Multilateral Trade Negotiations

Merlinda Ingco and Francis Ng
(April 1998)

The Uruguay Round agreements on agriculture were intended to move member countries toward a fair and market-oriented agricultural trading system. But in practice, state trading enterprises with monopoly power or exclusive rights in agricultural trade in major products still prevail in many countries. And significant price distortions still exist in trade in products subject to state trading.

The Uruguay Round agreements on agriculture were intended to move member countries toward a fair and market-oriented agricultural trading system. By progressively reducing domestic government support and export subsidies, converting nontariff barriers to tariffs, and reducing barriers to market access, members were committed to reducing distortions in world agricultural trade and in preventing new distortions from arising.

But state trading enterprises with monopoly power or exclusive rights in agricultural trade in major products are still prevalent in both industrial and developing countries.

In many countries, the operations of these state trading agencies tend in practice to nullify the intended objectives of the concessions on market access reached in the Uruguay Round.

And there are still significant price distortions in trade in products subject to state trading.

This paper — a product of the Development Research Group — is part of a larger effort in the group to evaluate the progress of trade liberalization and their effects on developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Maria Chona Fernandez, room MC3-610, telephone 202-473-3766, fax 202-522-1159, Internet address mfernandez@worldbank.org. The authors may be contacted at mingco @worldbank.org or fng@worldbank.org. (37 pages)

1916. The Size, Origins, and Character of Mongolia's Informal Sector during the Transition

James H. Anderson
(May 1998)

Mongolia's informal sector has expanded far more quickly during the transition than its formal sector, largely because of greater ease of entry into the informal sector. Current policy discourages entry into the formal sector.

The explosion of informal entrepreneurial activity during Mongolia's transition to a market economy represents one of the most visible signs of change in this expansive but sparsely populated Asian country.

To deepen our understanding of Mongolia's informal sector during the transition, Anderson merges anecdotal experience from qualitative interviews with hard data from a survey of 770 informals in Ulaanbaatar, from a national household survey, and from official employment statistics.

Using varied sources, Anderson generates rudimentary estimates of the magnitude of, and trends in, informal activity in Mongolia, estimates that are surprisingly consistent with each other.

He evaluates four types of reasons for the burst of informal activity in Mongolia since 1990:

- The crisis of the early and mid-1990s, during which large pools of labor were released from formal employment.
- Rural to urban migration.
- The "market's" reallocation of resources toward areas neglected under the old system: services such as distribution and transportation.
- The institutional environments faced by the formal and informal sectors: hindering growth of the formal sector, facilitating entry for the informal sector.

Formal labor markets haven't absorbed the labor made available by the crisis and by migration and haven't fully responded to the demand for new services. The relative ease of entering the informal market explains that market's great expansion.

The relative difficulty of entering formal markets is not random but is driven by policy. Improving policies in the formal sector could afford the same ease of entry there as is currently being experienced in the informal sector.

This paper — a product of the Development Research Group and the South East Asia and Mongolia Country Unit, East Asia and Pacific — is part of a larger program of research on the impact of institutional changes in Mongolia, and on the rule of law in transition economies. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-7656, fax 202-522-1155, Internet address psintimaboagye @worldbank.org. The author may be contacted at janderson2@worldbank.org. (66 pages)

1917. Financial Liberalization and Financial Fragility

Asli Demirgüç-Kunt and Enrica Detragiache
(May 1998)

Banking crises are more likely to occur in liberalized financial systems. Financial liberalization should be approached cautiously — even where macroeconomic stabilization has been achieved — in countries where there is little respect for the rule of law, poor contract enforcement, and a high level of corruption.

Demirgüç-Kunt and Detragiache study the empirical relationship between banking crises and financial liberalization using a panel of data for 53 countries for 1980–95.

They find that banking crises are more likely to occur in liberalized financial systems. But financial liberalization's impact on a fragile banking sector is weaker where the institutional environment is strong — especially where there is respect for the rule of law, a low level of corruption, and good contract enforcement.

They examine evidence on the behavior of bank franchise values after liberalization. They also examine evidence on the relationship between financial liberalization, banking crises, financial development, and growth.

The results support the view that, even in the presence of macroeconomic stabilization, financial liberalization should be approached cautiously in countries where institutions to ensure legal behavior, contract enforcement, and effective prudential regulation and supervision are not fully developed.

This paper — a joint product of the World Bank's Development Research Group and the International Monetary Fund's Research Department — is part of a larger effort to study financial liberalization. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-7656, fax 202-522-1155, Internet address psintimaboagye @worldbank.org. The authors may be contacted atademirguckunt@worldbank.org or edetragiache@imf.org. (48 pages)

1918. How Does Foreign Entry Affect the Domestic Banking Market?

Stijn Claessens, Asli Demirgüç-Kunt, and Harry Huizinga
(June 1998)

Does the entry of foreign banks make domestic banks more competitive? This study shows that, in developing countries, increasing the number (even more than the share) of foreign banks reduces both profits and overhead expenses of domestic banks.

Banking markets are becoming increasingly international through financial liberalization and general economic integration.

Using bank-level data for 80 countries for 1988–95, Claessens, Demirgüç-Kunt, and Huizinga examine the extent of foreign ownership in national banking markets. They compare net interest margins, overhead, taxes paid, and profitability of foreign and domestic banks.

The comparative functions of foreign banks and domestic banks is very different in developing and industrial countries, possibly because of a different customer base, different bank procedures, and different regulatory and tax regimes:

- In developing countries foreign banks tend to have greater profits, higher interest margins, and higher tax payments than do domestic banks.
- In industrial countries it is the domestic banks that have greater profits, higher interest margins, and higher tax payments.

It is common to read, in the literature on foreign banking, that the entry of foreign banks can make national banking markets more competitive, thereby forcing domestic banks to operate more efficiently. Claessens, Demirgüç-Kunt, and Huizinga show that increasing the foreign share of bank ownership does indeed reduce profitability and overhead expenses in domestically owned banks — so the general effect of foreign bank entry may be positive.

Interestingly, the number of foreign entrants matters more than their market share, suggesting that they affect local bank competition more on entry rather than after gaining a substantial market share.

These effects hold even when controlling for the fact that foreign banks may be attracted to markets with certain characteristics, such as low banking costs.

This paper — a joint product of the East Asia and Pacific Region and the Development Research Group — is part of a larger effort in the Bank to study the effects of increasing global integration of financial services. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC4-404, telephone 202-473-3722, fax 202-522-2530, Internet address hvo1@worldbank.org. The authors may be contacted at cclaessens @worldbank.org, ademirguckunt @worldbank.org, or H.P.Huizinga@Kub. NL. (30 pages)

1919. The Empirical Effects of Performance Contracts: Evidence from China

Mary Shirley and Lixin Colin Xu
(May 1998)

On average, performance contracts do not improve productivity in China's state enterprises and may even reduce it. But when they contain all the right features — managerial bonds, profit orientation, higher wage elasticity, and lower markup ratios — performance contracts can boost a firm's productivity growth rate by an estimated 10 percent.

Performance contracts are widely used to reform state-owned enterprises. By June 1994, there were 565 such contracts in 32 developing countries, used principally to reform large utilities and other monopolies, and roughly another 103,000 in China, where they are also used to reform state manufacturing enterprises.

A performance contract is a written agreement between the manager of a state enterprise (who promises to achieve specific targets in a certain time frame) and government (which — usually — promises to award achievement with a bonus or other incentive). Performance contracts are a variant of the pay-for-performance or incentive contracts often used to motivate managers in the private sector. In the public sector, they are viewed as a device to reveal information and motivate managers to exert effort.

Shirley and Xu analyze China's experience with performance contracts in more than 400 state enterprises. China is a good place for such a study because no country has ever used them on such a scale or with such a variety of enterprises (mostly in the competitive sector). China also uses many different kinds of contracts, with different targets (more profit-, tax-, or output-oriented).

Shirley and Xu find that performance contracts

- On average, do not improve productivity in China's state enterprises and may even reduce it.
- Are ineffective in competitive firms as well as monopolies.
- Do more harm when they provide only weak incentives and when they do not reduce information asymmetry.

They find no connection between variables for commitment and the effects of performance contracts.

Design matters. When performance contracts contain all the "good" features — profit orientation, higher wage elasticity, and lower markup ratios — the firm's productivity growth rate could increase as much as 10 percent.

The Chinese government was serious about implementing performance contracts, and used measures considerably more radical than other countries used, hailing the contract system as the official national mode for reforming state enterprises. But most of the contracts have had little or no effect on growth rates and the observed frequency of contracts with "good" provisions is exceedingly low.

Perhaps the political economy of incentive contracts in government settings merits further study. Political considerations may preclude the design of incentive contracts for government actors that could produce the sort of productivity gains some private firms have achieved. One observer (Byrd 1991) points out that the central government gave local governments a good deal of discretion in implementing performance contracts and local governments had a tendency to adopt the lowest common denominator, a "bare-bones" performance contract.

This paper — a product of the Development Research Group — is part of a larger effort in the group to understand state enterprises. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-8526, fax 202-522-1155, Internet address psintimaboagye@worldbank.org. The authors may be contacted at mshirley@worldbank.org or lxu@worldbank.org. (38 pages)

1920. Education and Earnings in a Transition Economy (Vietnam)

Peter R. Moock, Harry Anthony Patrinos, and Meera Venkataraman
(May 1998)

One study shows that as Vietnam liberalizes its labor market, private rates of return to primary and higher education are already relatively high — and could be higher yet with greater cost recovery and lower costs (a more efficient system).

The transition from a centrally planned to a market economy is likely to have a strong impact on the labor market, on relative earnings, and on returns to education.

Major economic reforms in Vietnam since 1986 (the policy known as *Doi Moi*) have included a number of measures to liberalize the labor market. It is too soon to assess the full impact of these reforms, but Moock, Patrinos, and Venkataraman analyze the returns to education, on the basis of earnings in 1992–93 (collected in the first Vietnam Living Standards Survey).

This represents one of the first country-wide analyses of the monetary benefits of schooling in Vietnam at a time when the labor market was in transition.

On average, the estimated rates of returns are still relatively low, which is to be expected, since salary reforms were not introduced until 1993. Average private rates of return to primary education (13 percent) and university education (11 percent) are higher than those to secondary and vocational education (only 4 to 5 percent). Returns to higher education are slightly higher for women (12 percent) than for men (10 percent).

Evidence from other transition economies suggests that returns are likely to increase as reforms in the labor market take full effect. The results support this hypothesis: Returns for younger Vietnamese workers (14 percent) are considerably higher than for older workers (only 4 percent).

Implications for policymaking:

- It is important to monitor future earnings and trends in the labor market, as updates of this analysis could provide more robust estimates of the transition's effects on earnings and returns to education.
- At a time when the Vietnamese government is reassessing its pricing policy, the fact that private rates of return to higher education are relatively high suggests the potential for greater cost recovery.
- Efforts to improve efficiency in secondary and higher education could increase the rate of return by lowering costs.

This paper — a joint product of the East Asia and Pacific, Country Department I, Human Resources Operations Division, and Human Development Network, Education Team — is part of a larger effort in the Bank to analyze the economic benefits of schooling in transition economies. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Miriam Christian, room G8-058, telephone 202-473-6736, fax 202-522-3233, Internet address mchristian@worldbank.org. The authors may be contacted at pmoock@worldbank.org or hpatrinos@worldbank.org. (26 pages)

1921. Making Voice Work: The Report Card on Bangalore's Public Service

Samuel Paul
(May 1998)

A citizen's assessment of public services provided evidence of inefficiency and corruption and stimulated public service providers to be more responsive to customers. So, public feedback can change behavior.

Paul reports how a "report card" on public services in the Indian city of Bangalore was used by citizen groups to create greater public awareness about the poor performance of public service providers and to challenge them to be more efficient and responsive to their customers.

The report card was the result of a survey of a sample of users (both rich and poor) of the city's services and rated public agencies in terms of public satisfaction with different dimensions of their services. Public feedback was used to quantify the extent of corruption and other indirect costs of the services. The result was a citizens' assessment of public services.

The survey was completed in 1993, but the follow-up activities continued for three years, with the active involvement of several concerned citizen groups and nongovernment bodies. Paul discusses how the media disseminated the report card findings, how public agencies responded to it, and how agencies joined citizen groups in joint initiatives to improve services. Similar report cards have since been prepared on several other large cities in India.

It is not easy to measure the impact of the report card on the quality and responsiveness of Bangalore's service providers. Paul examines the problems involved and gives some intermediate indicators.

There is some evidence that public awareness of the problems has increased as a result of the experiment. Civil society institutions seem to be more active and their interactions with public agencies have become better organized, more purposeful, and continuous. As a result, some public agencies in Bangalore have begun to take steps to improve their services.

This paper is a product of the Development Research Group. The study was funded by the Bank's Research Support Budget under the research project "Effectiveness of Client Surveys in Improving Service Delivery" (RPO 682-07). Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Bernardo, room MC2-501, telephone 202-473-1148, fax 202-522-1154, Internet address cbernardo@worldbank.org. The author may be contacted at spaul@worldbank.org. (24 pages)

1922. Regional Groupings Among Microstates

Soamiely Andriamananjara and Maurice Schiff
(May 1998)

This model shows that a microstate's decision to form, expand, or join a regional organization is based on reduced negotiating costs and increased bargaining power, rather than on the traditional costs and benefits of trade integration.

Forming a regional grouping with neighboring nations may be one way for microstates to overcome a major problem: Because of their weak bargaining power and high fixed costs of negotiation, microstates are at a severe disadvantage in dealing with the rest of the world. They don't have the human and physical resources to unilaterally conduct the various bilateral and multilateral negotiations a developing nation typically conducts.

Andriamananjara and Schiff present a model in which the decision to form, expand, or join a regional "club" is based on reduced negotiating costs and increased bargaining power, rather than on the traditional costs and benefits of trade integration (which might be miniscule for a microstate and might even generate welfare losses).

Under various conditions for entry, the model is used to determine the equilibrium group size, which is shown to be positively correlated with the number of issues to be tackled, the degree of similarity among countries, and the per-issue costs of international negotiation.

They use the case of the Caribbean Community (CARICOM) to show the model's relevance in the real world. The countries that belong to CARICOM pooled their negotiating resources and formulated common policy stances. Despite its relatively limited impact on trade and investments, CARICOM served as a political instrument in joint negotiations on trade and investment with larger countries and regional trade blocs. By establishing a union, the CARICOM countries succeeded in making their voices heard on a variety of issues in a way none of them could have done alone.

This paper — a product of the Development Research Group — is part of a larger effort in the group to examine the economics of regionalism and development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Maurice Schiff may be contacted at mschiff@worldbank.org. (33 pages)

1923. When Vintage Technology Makes Sense: Matching Imports to Skills

Giorgio Barba Navaretti, Isidro Soloaga, and Wendy Takacs
(May 1998)

Trade policy in developing countries often discriminates against imports of secondhand goods. Used machines may make sense when there is complementarity between skills and production technologies and the skill base of the importing country is poor.

Trade policies in many developing countries discriminate — through import bans, licensing requirements, or higher tariff rates. Even Australia adds a $12,000 tariff on used cars. Such discrimination is often motivated by the desire to protect domestic industries from competition from low-priced goods, to avoid becoming a dumping ground for castoffs from high-income countries, or to push domestic industries toward the technological frontier.

But trade restrictions on used capital goods may be inappropriate in countries where low wages and high interest rates call for labor-intensive production processes. Older equipment is likely to be more labor-intensive than new equipment, because technological changes tend to be labor-saving and older equipment requires greater maintenance and presents greater risk of machine downtime.

In this empirical analysis of international trade in production machinery, Barba Navaretti, Soloaga, and Takacs examine choices between new and used equipment, when there is labor-saving technical progress and the skills and technology available in a firm complement each other. They examine U.S. exports of metalworking machine tools by country of destination, classifying machines by vintage technological characteristics. They do so by developing a new method for classifying trade data on machines according to the minimum technological skills necessary to operate them. They are consequently able to use trade data to measure technology transfer. The main findings:

- The lower a country's level of development — as measured by such indicators as per capita income, wages, and average education — the greater the share of used equipment imported by the country.
- Imports of used machinery are greater, the faster the technical change and the greater the skills required to run the machinery efficiently.

They conclude that technological factors and skill constraints may be far more important than wage and interest-rate differentials in determining a firm's choice of technique in developing countries. Consequently the technological gap between advanced and developing economies rises when machines embody faster technological progress.

Barba Navaretti, Soloaga, and Takacs argue against constraints on imports of used equipment, not for the reason often given in existing literature — inappropriate capital-labor ratios in low-wage countries — but because investing in advanced technologies makes sense only if the countries importing them have the skill to use them.

This paper — a product of the Development Research Group — is part of a larger effort in the group to assess the role of trade barriers on technology diffusion. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. The authors may be contacted at barba@imiucca.csi.unimi.it, wtakacs@umbc2.umbc.edu, and isoloaga@worldbank.org. (33 pages)

1924. Voucher Privatization with Investment Funds: An Institutional Analysis

David Ellerman
(May 1998)

The most likely outcome of the strategy of voucher privatization with investment funds may be a two-sided grab fest by fund managers and enterprise managers — along with drift, stagnation, and decapitalization of the privatized industrial sector.

Common wisdom among post-socialist reformers has been to use voucher investment funds to provide the corporate governance needed to restructure newly privatized enterprises after mass privatization efforts. The idea has been that mass privatization would spread the ownership too wide and make corporate governance difficult.

Ellerman examines the likely institutional behavior of voucher funds and the possible effects of their development on a transition economy. Since most policy advice has been in favor of voucher privatization with investment finds, Ellerman can be seen as playing the devil's advocate, but his argument is institutional, not statistical. Policymaking requires insight and foresight into how institutions will tend to function.

He concludes that voucher funds will introduce a bias in the economy away from the real industrial sector toward an ersatz "financial sector" that will have little if any positive financial role but will be well-protected by friendly regulators.

One long-term consequence of voucher privatization with investment funds, according to this view, is a *de facto* "industrial policy" of real sector decapitalization in favor of short-term rent-seeking by fund managers through board sinecures and lucrative side deals with portfolio companies and through financial market manipulation and paper entrepreneurship in the "financial sector."

Without strong corporate governance from the funds and without stable ownership of their own, many enterprise managers will exploit the post-socialist version of the "separation of ownership and control" to grab what they can in the form of salaries, bonuses, perquisites, and side deals.

The most likely results of the strategy of voucher privatization with investment funds may be a two-sided grab fest by fund managers and enterprise managers — together with the accompanying drift, stagnation, and decapitalization of the privatized industrial sector.

This paper — a product of the Office of the Senior Vice President, Development Economics — is part of a larger effort in the Bank to define policymaking using institutional analysis. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Margaret Murray, room MC4-333, telephone 202-473-6095, fax 202-522-1157, Internet address mmurray@worldbank.org. The author may be contacted at dellerman@worldbank.org. (12 pages)

1925. Half a Century of Development Economics: A Review Based on the *Handbook of Development Economics*

Jean Waelbroeck
(May 1998)

How development economics has changed since Nehru and Gandhi debated what type of program would best serve an independent India.

Development economics has made remarkable progress in 50 years, says Waelbroeck, summarizing changes in the field since Nehru's first proposals for an independent India. Synthesizing insights about changes in the field from the many contributors to the *Handbook of Development Economics,* Waelbroeck observes (among other things):

- Different schools of thought may dominate, but the range of research has broadened. Economics has "hardened" as its practitioners have learned to use data more carefully and to reason more rigorously.
- The policy message has been turned upside down. Gone is the idea that development is industrialization and that the main policy problem is to manage the interface between country and city. Today urbanization and industrialization are viewed as mere components of an integrated transformation, in which the expansion of foreign trade is central. Traditional institutions are viewed with far more understanding, because overhasty modernization has often proved counterproductive.
- More than ever, development is seen as a "whole replacement" process, the key to which is mastery of Northern technology — now understood to be both simpler and more complex than previously thought. Simpler, because much technology is uncomplicated, and complex because even simple technology requires ingenuity and a costly investment in adaptations.
- There has been a radical change in economists' view of market agents and policymakers. Gone are the days when economists thought their advice should be aimed mainly at planners. Policymakers are utility maximizers, too. Employees of state enterprises coalesce into powerful interest groups that block efforts to raise productivity. The new thinking is sometimes modified by evok-

ing the vague concept of "governance," under which the economist's task is to help design a system of interacting state and private institutions that, led by the state, cooperate in achieving social goals. Whether something useful will come from this line of thinking remains to be seen.

Waelbroeck detects major gaps in economists' understanding of development, suggesting a particular need for further study of collective action (a far more pervasive component of human action than is realized) and the selection of roles by individuals and the costly investment this entails (a concept that may shed light on Schumpeter's well-known but little-studied entrepreneur).

This paper is a product of the Research Advisory Staff. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jane Sweeney, room MC4-394, telephone 202-473-1021, fax 202-522-0304, Internet address jsweeney@worldbank.org. May 1998. (49 pages)

1926. Do Budgets Really Matter? Evidence from Public Spending on Education and Health in Uganda

Emmanuel Ablo and Ritva Reinikka
(June 1998)

A survey can provide a useful reality check where institutions are weak. Certainly, budgets and official statistics are inadequate as a guide for policymakers.

Ablo and Reinikka demonstrate that budget allocations alone can be misleading in explaining outcomes and making policy decisions, when institutions are weak. They diagnose the problem, using empirical evidence from primary education and health care in Uganda, but arguing that a similar problem exists in many countries. Adequate public accounts are not available so they carried out a field survey of schools and clinics to collect data on spending. Problems with the flow of public funds have to do largely with governance and a lack of accountability. Among problems with the service delivery system:

- Primary enrollments increased 60 percent in 199195, but official figures indicate enrollments were stagnant. Such a stunning discrepancy indicates that official data cannot always be trusted.
- The government's share of funding increased over time, but public primary education was still funded largely by parents, who contributed, on average, more than 70 percent of total spending on schools in 1991 (median 40 percent) and 60 percent in 1995 (median 20 percent). Parents' contributions continued to increase despite higher public spending.
- Less than 30 percent of funding intended for nonsalary public spending actually reached the schools in 1991–95; district authorities kept and used most of the capitation grant meant for schools. (An increase in enrollments which was not taken into account when the total amount of the grant was calculated is responsible for the remaining discrepancy.) Similarly, at best, schools were allowed to keep only a third of mandatory tuition fees from parents; the rest went to district education offices.
- By and large, salary payments did reach the schools, so at least the wage part of the increase in budget allocations filtered down through the system. The only systematic way of misappropriating salary funds were "ghosts" on the payroll. Close to 20 percent of all teachers on the payroll were removed as ghosts in 1993.
- The behavior of public service facilities in the two sectors varies considerably. Schools, for example, keep systematic records of financial flows and enrollments (perhaps because parents provide most of the funding and are likely to insist on accountability). The health care sector does not keep good records.

Since release of the survey results, there have been changes. Among them, monthly transfers of public funds are reported in the media; school-based procurement has replaced the central supply of construction and other materials; and an effort has been made to institute basic public accounting systems in the public sector, including districts.

This paper — a product of Macroeconomics 2, Africa Region — is part of a larger effort in the region to improve public expenditure management and service delivery. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Kathryn Rivera, room J10-281, telephone 202-473-4141, fax 202-473-8262, Internet address krivera@worldbank.org. The authors may be contacted at eablo @worldbank.org and rreinikka @worldbank.org. (35 pages).

1927. Revenue-productive Income Tax Structures and Tax Reforms in Emerging Market Economies: Evidence from Bulgaria

Fareed M. A. Hassan
(June 1998)

Any consideration of alternative tax systems must consider underlying levels and distributions of income. But broader, simpler tax bases would facilitate administration, increase revenues, and reduce opportunities and incentives for tax evasion.

Using a household budget survey for 1992, Hassan shows the poor revenue performance and distributional impact of Bulgaria's personal income tax system. He explores the implications for revenue and income distribution of two alternative tax systems — a flat tax and a progressive but simpler three-brackets tax system.

He demonstrates that simpler tax structures with lower tax rates could achieve at least equal revenue and distributional objectives and are superior in terms of efficiency and equity. (The findings are robust when Bulgaria's significant tax evasion is included.)

But tax changes since 1992 have, if anything, moved Bulgaria even further from a simple income tax system: the number of rates and brackets increased from 7 to 10, and the levels of exemption remain unchanged. (Complex, higher rates complicate administration and enforcement and provide incentives for tax evasion. And in the alternative systems Hassan explores, the poor are protected with higher exemptions.)

Fortunately, the country's personal income tax structure began to move toward less nominal progressivity after Bulgaria's 1997 tax reform program. The tax rate in the top income bracket was reduced from 52 percent to 40 percent, the number of tax brackets was halved, and the exemption level was increased 20 percent (reducing tax burdens on the poor).

This paper — a product of the Poverty Reduction and Economic Management Sector, Europe and Central Asia Region — is part of a larger effort in the region to analyze the social and revenue dimensions of tax reforms in transition economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Alison Panton, room H11-033, telephone 202-458-5433, fax 202-477-0816, Internet address apanton@worldbank.org. The author may be contacted at fhassan @worldbank.org. (25 pages)

1928. Combining Census and Survey Data to Study Spatial Dimensions of Poverty

Jesko Hentschel, Jean Olson Lanjouw, Peter Lanjouw, and Javier Poggi
(June 1998)

Combining sample survey data and census data can yield predicted poverty rates for all households covered by the census. This offers a means to construct detailed poverty maps. But standard errors on the estimated poverty rates are not negligible.

Poverty maps, providing information on the spatial distribution of living standards, are an important tool for policymaking and economic research.

Policymakers can use such maps to allocate transfers and inform policy design. The maps can also be used to investigate the relationship between growth and distribution inside a country, thereby complementing research using cross-country regressions.

The development of detailed poverty maps is difficult because of data constraints. Household surveys contain data on income or consumption but are typically small. Census data cover a large sample but do not generally contain the right information. Poverty maps based on census data but constructed in an ad-hoc manner can be unreliable.

Hentschel, Lanjouw, Lanjouw, and Poggi demonstrate how sample survey data and census data can be combined to yield predicted poverty rates for all households covered by the census. This represents an improvement over ad hoc poverty maps. However, standard errors on the estimated poverty rates are not negligible, so additional efforts to cross-check results are warranted.

This paper — a joint product of the Development Research Group and the Poverty Reduction and Economic Management Network, Poverty Division — is part of a larger effort in the Bank to study the spatial distribution and determinants of poverty. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Peter Lanjouw, room MC3-555, telephone 202-473-4529, fax 202-522-1153, Internet address planjouw@worldbank.org. Jesko Hentschel may be contacted at jhentschel@worldbank.org. (31 pages)

1929. A Database of World Infrastructure Stocks, 1950–95

David Canning
(June 1998)

An annual database of physical infrastructure stocks for a cross-section of 152 countries for 1950–95 reveals, among other things, that having more main telephone lines per capita has a positive effect on economic growth.

Canning describes an annual database of physical infrastructure stocks for a cross-section of 152 countries for 1950–95. The database contains six measures:

- Kilometers of roads.
- Kilometers of paved roads.
- Kilometers of railway lines.
- Number of telephones.
- Number of telephone main lines.
- KW of electricity generating capacity.

The database includes some measures of infrastructure quality (percentage of roads in poor condition, percentage of local phone calls that are unsuccessful, percentage availability of diesel locomotives, and percentage of electricity lost from the system), but only for recent years. Canning examines correlation patterns and reports regressions relating infrastructure stocks to country population, per capita GDP, land area, and the urbanization ratio. The relationship between infrastructure and economic growth is examined in a preliminary way.

He reports that:

- Nontransportation infrastructure stocks tend to increase one-for-one with population but increase more than proportionately with per capita GDP.
- Geographic factors (area, urbanization ratio) appear to affect the provision of nontransportation infrastructure in poor countries but not in rich countries.
- Transportation infrastructure appears to increase less than proportionately with population, and increases with income only after a middle-income threshold has been reached.
- Geographic factors seem to influence the length of total roads and rail lines but not of paved roads.

Panel unit root tests indicate that the log infrastructure stock per capita series are nonstationary and have a unit root. Cross-section growth regressions show our common worldwide estimated regression results for infrastructure stocks to be stable, long-run relationships. Preliminary regression results suggest that having a greater number of telephone main lines per capita has a positive effect on economic growth.

This paper — sponsored jointly by the Public Economics Division, Development Research Group, and Transport, Water, and Urban Development Department—is part of a multicountry panel study of infrastructure and growth. The study was funded by the Bank's Research Support Budget under the research project "Infrastructure and Growth: A multicountry panel study" (RPO 680-89). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Awatif Abuzid, room F4P-220, telephone 202-473-3348, fax 202-522-3227, Internet address aabuzid@worldbank.org. (42 pages)

1930. The Main Determinants of Inflation in Albania

Ilker Domac and Carlos Elbirt
(June 1998)

This study of inflation in Albania yields several conclusions:

- *Fighting inflation and keeping exports competitive requires cuts in the budget deficit and credit to government.*
- *The strong seasonal inflation can be somewhat ameliorated by improving infrastructure and customs services.*
- *Structural reforms and improved infrastructure should be part of all stabilization programs, because growth reduces inflation.*

Domac and Elbirt investigate the behavior and determinants of inflation in Albania, using three approaches. They

- Decompose inflation into four components: seasonal, cyclical, trend, and random.
- Rely on the widely used Granger causality test, using disaggregated data on both the consumer price index (CPI) and key economic variables.
- Apply cointegration and error-correction techniques to the process of inflation, using a simple theoretical model.

Using the first approach, they conclude that inflation exhibits strong seasonal patterns associated with agriculture seasonality. Peaks and troughs of monetary aggregates correspond to those of inflation, with a two-month lag. The exchange rate also exhibits stable seasonality, reaching its trough in August and tending to depreciate early in the year.

The Granger causality test shows M1 (currency in circulation plus demand deposits) and the exchange rate to have predictive content for most items of the CPI. The empirical findings also indicate that credit to government is a good predictor of medical care, transportation, and communication prices. But causality also runs from the prices of bread and cereals, recreation, education, and culture to credit to government, since these items, at least during the period under consideration, are subsidized and contribute to the budget deficit. And causality runs from credit to government to the price of nontradables, highlighting the fact that an increase in the fiscal deficit would undermine Albania's competitiveness by producing appreciation in the real exchange rate.

The results of cointegration and error-correction techniques confirm that, in the long run, inflation is positively related to both money supply and the exchange rate, and negatively related to real income. A 1-percent increase in M1, for example, will raise inflation by 0.41 percent; a 1-percent depreciation of the exchange rate will increase inflation by 0.17 percent; whereas a 1-percent increase in real income will reduce inflation by 0.25 percent. Inflation adjusts to its equilibrium value fairly rapidly — 25 percent a month. The impact of the exchange rate on inflation occurs a month later, while the impact of real income and money take place two and four months later, respectively.

The findings support the conventional elements of a typical stabilization program. Fighting inflation and keeping exports competitive requires reducing both the budget deficit and credit to government. The strong seasonal nature of inflation can be somewhat ameliorated by improving infrastructure and customs services. Structural reforms and improvements in infrastructure should be part of any stabilization program because economic growth is an antidote to inflation.

This paper — a joint product of the Albania/Croatia Country Unit, Europe and Central Asia Region, and the Poverty Reduction and Economic Management Sector Unit, East Asia and Pacific Region — is part of a larger effort in the Bank to enhance the knowledge on the inflationary process and its practical implications. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Fran Lewis, room MC8-168, telephone 202-458-2979, fax 202-522-1784, Internet address flewis@worldbank.org. The authors may be contacted at idomac @worldbank.org or celbirt@worldbank.org. (39 pages)

1931. The Cost and Performance of Paid Agricultural Extension Services: The Case of Agricultural Technology Transfer in Nicaragua

Ariel Dinar and Gabriel Keynan
(June 1998)

Experience in Nicaragua with paid extension services — also known as private, commercial, or cofinanced extension services — shows that even poor farmers are willing to pay for a service that improves their economic efficiency and ability to earn a living.

Budgets for extension services have been reduced in many countries. One response to these reductions in public services in some countries has been to privatize extension services — with extension services provided, for a fee, by either public agencies or private companies. Under the new approach, producers become clients instead of beneficiaries.

Dinar and Keynan examine ways to measure the cost of providing paid-extension services and its performance and apply these indicators to data on Nicaragua, where paid extension has existed for several years.

Data were insufficient to compare the quality of privately and publicly provided extension services, but available data suggest that the costs of extension have declined over time. Results suggest that paid extension is feasible and has a positive impact, even in a relatively poor country such as Nicaragua. The national system for agricultural technology-transfer services was redesigned to include three main modules:

- Mass media and free demonstrations.
- Cofinanced extension services.
- Private extension services.

The relatively high cost recovery rates in Nicaragua and the economic performance of the two paid programs show that even poor farmers are willing to pay for a service that improves their economic efficiency and ability to earn a living. To the surprise of everyone involved, Nicaragua's producer clients understood that without cost-sharing, the system would not endure.

This paper — a joint product of the Sector Leadership Group, Latin America and the Caribbean Region, and the Rural Development Department — is part of a larger effort in the Bank to implement policies in the context of the Agricultural Technology and Land Management Project in Nicaragua. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Fulvia Toppin, room S8-220, telephone 202-473-0450, fax 202-522-1142, Internet address ftoppin @worldbank.org. The authors may be contacted at adinar@worldbank.org and gkey@actcom.co.il. (37 pages)

1932. Air Pollution and Health Effects: A Study of Respiratory Illness Among Children in Santiago, Chile

Bart D. Ostro, Gunnar S. Eskeland,
Tarhan Feyzioglu, and Jose Miguel Sanchez
(June 1998)

Environmental management has benefits, not just costs, and analysis can help focus efforts to get more benefits out of each dollar. Among children in Santiago, Chile, reduced concentrations of small dust particles (PM10) will reduce a range of symptoms, from coughs to bronchitis.

Ostro, Eskeland, Feyzioglu, and Sanchez estimate dose-response functions for respiratory disease among children based on data from public clinics in Santiago. They find that respiratory disease among Santiago's children is significantly affected by air pollution, measured as PM10 (small dust particles). The effect, for children under 15 (and subgroups), is robust to the inclusion of a wide range of covariates and alternative specifications.

In some model specifications, ozone, another measure of pollution, is also found to affect respiratory illness.

Internationally, effects on morbidity have typically been found in cross-section studies, or in prospective studies following a panel of predisposed children, such as asthmatics.

This study is important in finding such an effect for a larger population of children with more general characteristics — hence more useful for cost-benefit analyses of air pollution control.

The study, and a companion study of premature mortality, add to much-needed evidence on the benefits of pollution control in developing countries. The results fit well in a growing literature on dose-response functions for health effects, and so adds support to a method of transferring does response functions when local research is not available. An earlier study using this method found that modestly estimated health benefits exceeded pollution control costs in Santiago by more than 50 percent.

This paper — a product of Public Economics, Development Research Group — was initiated by operational support to an environmental study in the Latin America and the Caribbean region. The study had additional funding from the Bank's Research Support Budget under the research project "Air Pollution and Health Effects in Santiago, Chile" (RPO 678-48). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Bernardo, room MC2-501, telephone 202-473-1148, fax 202-522-1154, Internet address cbernardo@worldbank.org. Gunnar Eskeland may be contacted at geskeland@worldbank.org, and Tarhan Feyzioglu may be contacted at tfeyzioglu@imf.org. (19 pages)

1933. The 1997 Pension Reform in Mexico

Gloria Grandolini and Luis Cerda
(June 1998)

Under Mexico's reformed pension system, private pension funds could become the single largest financial industry in a decade. Their efficiency and investment returns will profoundly affect the welfare of retirees, the finances of government, the development of capital markets, and the rate of savings.

In 1995–96, Mexico shifted to a multipillar approach to old-age security. The objective of the publicly managed first pillar is redistribution; a fully-funded second pillar provides for mandatory individual savings accounts and competitive but exclusive and specialized pension fund management; the third pillar is voluntary savings.

This package could provide effective income security and protection against old-age poverty, in a manner compatible with goals of savings and economic growth. It offers Mexico's first real opportunity to shift to a defined-contribution model and to expand and deepen domestic capital markets by creating a new class of institutional investors — although in the short term its impact on capital markets will be limited by the need to focus on the security of pension fund investments.

The reformed system provides for a probably irreversible shift toward private intermediation of most domestic investment funds. Further efforts to improve the pension system should encourage efficiency, confidence, and economies of scale.

There are weaknesses in Mexico's pension design — especially the limited scope for workers in the private sector, the continued role of the housing-fund component, and the moral hazard implications of the lifetime-switch option. But Mexico achieved radical reform with its pension system within a difficult political and economic environment.

And the timing of reform was appropriate. The age structure in the existing system is very young, so coverage could increase. Also, reform took place after the inflationary 1980s and the recent financial crisis, which eroded the real value of old pensions, the acquired pension rights of the transition generation, and the minimum pension for minimum-wage retirees.

If returns on invested contributions are high enough, much of the transition generation will choose the defined-contribution alternative over the old pay-as-you-go system. This will release the government from pension liabilities, except for the minimum pension guarantee for new affiliates.

Ensuring the system's long-term success will require improved financial performance from INFONAVIT, the authorities' political will and technical ability to enforce pension laws and regulations, and the system's flexibility in the face of changing circumstances.

This paper — a product of the Finance, Private Sector, and Infrastructure Unit, Latin America and the Caribbean Regional Office — is part of a larger effort to study contractual savings development in Latin America. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cara Zappala, room I5-074, telephone 202-458-7945, fax 202-522-2106, Internet address czappala@worldbank.org. Gloria Grandolini may be contacted at ggrandolini@worldbank.org. (43 pages)

1934. WTO Accession for Countries in Transition

Constantine Michalopoulos
(June 1998)

Accession to the World Trade Organization should be expedited, and the processing time for applications reduced to no more than two years. This would enable the WTO to achieve universal membership in the next five years, a worthwhile objective for the international community.

Countries in transition have considered membership in the World Trade Organization (WTO) an important step toward integration in the international economic system. After several years of negotiations, five members of the former Soviet Union (FSU) — Armenia, the three Baltic countries, and the Kyrgyz Republic — may become members in 1998. It will probably take longer for Russia, Ukraine, and some others.

It takes four to five years to process applications for FSU countries — which is close to average for recent applicants. The five countries expected to accede to the WTO this year are among the more liberal members of the FSU. With those five processed, there will be a backlog of another 26 applications, most them countries in transition, including China and Russia. At the current rate of processing, it will take five to six years to process them — and a decade or more for the 25 or so developing and transition economies that have yet to apply.

Processing is time-consuming because:

- Legislative requirements needed for accession are time-consuming.
- Candidate countries are weak institutionally and unfamiliar with the economic and legal issues to be addressed.
- The fact finding process is unneccessarily cumbersome and time-consuming.
- Technical assistance to applicants in meeting the requirements for WTO accession is not effectively coordinated.
- Addressing the commercial interests of all members requires protracted negotiations.

Governments seeking accession must coordinate the legislative and regulatory changes needed in their foreign trade regimes, adopt liberal trade policies, and identify areas of institutional weakness that require delays in implementation of WTO provisions and seek agreement on such delays.

WTO members, for their part, should expedite the process, as universal membership is in everyone's best interest. They should:

• Agree to suitable, time-bound extensions to allow acceding governments to address institutional weaknesses.

• Provide coordinated assistance to acceding countries to strengthen their institutional capacity.

• Streamline the fact finding aspects of the accession process and give the WTO secretariat the budgetary resources it needs to work with applicant governments for this purpose.

This paper is part of a larger effort of the World Bank to collaborate with the World Trade Organization in developing approaches for the more effective integration of the developing countries and transition economies in the international trading system. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada @worldbank.org. (30 pages)

1935. Explaining the Increase in Inequality during the Transition

Branko Milanovic
(June 1998)

Since the beginning of transition to market economy, inequality has increased in all transition countries. The factors driving inequality up: increasing wage inequality (as workers move from a relatively egalitarian state sector to a less equal private sector), and the rising share of income from self-employment and property (both very unequally distributed). Social transfers have failed to dampen the increase in inequality because they have remained, as under socialism, unfocused.

The transition from planned to market economy has witnessed one of the biggest and fastest increases in inequality ever recorded. On average, inequality in Eastern Europe and the former Soviet Union increased from a Gini coefficient of 25–28 (below the OECD average) to 35–38 (above OECD average) in less than 10 years. In some countries, such as Bulgaria, Russia, and Ukraine, the increase in inequality has been even more dramatic, outpacing the yearly speed of Gini increase in the United Kingdom and the United States in the 1980s by three to four times.

What are the factors pushing inequality up? Milanovic constructs a simple model of transition defined as the removal of restriction on private sector development. As the private sector becomes free, it attracts workers who leave the shrinking state sector. Wage inequality in the private sector is greater than in the old, relatively egalitarian state sector. This is one of the forces pushing inequality up. The second is the growth of income from self-employment and property, both of which are fairly unequal sources of income both before the transition and now. In addition, some of the released state sector workers remain unemployed. Their incomes decline. Increased inequality is thus accompanied by the "hollowing out" of the middle class (where the middle class is defined as the former state sector workers). One part of state sector workers moves to higher incomes as workers in the private sector or entrepreneurs; another remains jobless.

The model is contrasted with the actual developments in six transition economies: Bulgaria (over 1989–95), Hungary (1987–93), Latvia (1989–96), Poland (1987–95), Russia (1989–94), and Slovenia (1987–95). In all countries, wage inequality has increased (in some, like Russia, dramatically); income from self-employment has remained as unequal as before but its share in total income has risen, and the importance of social transfers in total income has increased, but its focus on the poor has not improved.

This paper — a product of the Development Economics Research Group — is part of a larger effort in the group to study social issues in transition economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Grace Evans, room MC3-568, telephone 202-458-5734, fax 202-522-1153, Internet address gevans@worldbank.org. The author may be contacted at bmilanovic @worldbank.org. (47 pages)